

REMARKS

Claims 1-2, 4, 6-32, and 34-35 are pending. By this Amendment, no claims are cancelled, no claims are amended and no new claims are added.

Claim Rejections – 35 U.S.C. § 102

Claims 1-2, 4, 6-13, 16-19, 21-23, 25-28, 30, 32, and 34-35 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,070,483 to Berni (“Berni”). The rejections are traversed for at least the reasons set forth below.

Claim 1 currently recites that “detecting the response includes monitoring successively each of a plurality of non-discrete, *overlapping* segments defining the detection area to ascertain movements of particles in the detection area over a response period” (emphasis added). Claims 21 and 35 currently recite that “the detecting apparatus includes a monitoring apparatus adapted to monitor successively each of a plurality of non-discrete, *overlapping* segments defining the detection area to ascertain movements of particles over a response period” (emphasis added). The sample areas disclosed by Berni, however, *do not* overlap.

Berni provides that “[t]he airborne laser system of the present invention operating at an elevation of 1000 m may sample the ground every 4 m and then sum the signals from 16 such locations together at every 60 m interval over the square area 900 m on a side.” (Col. 5, ll. 46-50.) The Examiner has apparently concluded that the sample areas themselves are overlapping because they are 4 meters in diameter. This interpretation is incorrect because Berni states that the area or spot which is sampled has a diameter of 0.5 meters. (See col. 5, ll. 10-12 (“An area or

spot of about 0.5 m in diameter should be sufficient to replace a single geo-phone”).) If there were 16 of such 0.5-meter areas in a 60-meter interval, the 0.5-meter areas would not overlap.

Claim 1 also currently recites “detecting a response to a seismic event within a detection area of the sea bottom from a position spaced apart from the sea bottom, the response including P-waves and S-waves resulting from the seismic event.” Claims 21 and 35 also currently recite “a detecting apparatus adapted to detect within a detection area of the sea bottom a response to the seismic event, the response including P-waves and S-waves resulting from the seismic event, the detecting apparatus being spaced apart from the sea bottom.” Berni, however, is silent with regard to the measurement of S-waves.

In order to be able to measure S-waves at a distance, it is necessary to detect the movement of the ground in three directions simultaneously. Measurements from one camera, however, will only provide information concerning movement the direction of the incoming light beam. Berni fails to disclose the use of several cameras in different positions directed at the same spot in different directions. Therefore, the single-camera system disclosed by Berni can only detect a vibration in one direction. Such unidirectional detection is not sufficient to deduce the underlying S-waves and P-waves even though the S-waves and P-waves may affect the measurements of the Berni system. Therefore, claims 1, 21, and 35 are allowable.

Claims 2, 4, 6-13, 16-19, 32, and 34, which depend from claim 1, and claims 21-23, 25-28, and 30, which depend from claim 21, are therefore also allowable for at least the same reasons set forth with regard to claims 1 and 21. The rejections of claims 2, 4, 6-13, 16-19, 22-23, 25-28, 30, 32, and 34 are traversed but not expressly argued herein in view of the allowability of the underlying base claims.

Claim Rejections – 35 U.S.C. § 103

Claim 14 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Berni and further in view of U.S. Patent No. 6,134,966 to Donskoy (“Donskoy”). Claims 15, 20, 29, and 31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Berni.

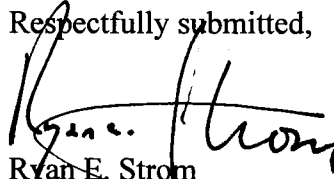
As explained above, claims 1 and 21 are allowable. Claims 14-15 depend from claim 1 and claims 20, 29, and 31 depend from claim 21. Therefore, claims 14-15, 20, 29, and 31 are allowable for at least the same reasons set forth with regard to claims 1 and 21. With respect to claim 14, Donskoy fails to make up for the deficiencies of Berni set forth above. The rejections of claims 14, 15, 20, 29, and 31 are traversed but not expressly argued herein in view of the allowability of the underlying base claims.

Conclusion

In view of the foregoing, it is submitted that this application is in condition for allowance. Favorable consideration and prompt allowance of the application are respectfully requested.

The Examiner is invited to telephone the undersigned if the Examiner believes it would be useful to advance prosecution.

Respectfully submitted,



Ryan E. Strom  
Registration No. 58,525

Customer No. 24113  
Patterson, Thunte, Skaar & Christensen, P.A.  
4800 IDS Center  
80 South 8th Street  
Minneapolis, Minnesota 55402-2100  
Telephone: (612) 349-3011